

REMARKS

The office action of 04-08-2004 has been reviewed and its contents carefully noted. Reconsideration of this case, as amended, is requested. Claims 1 through 11 remain in this case.

Rejection(s) under 35 U.S.C. §102

Claims 1-11 were rejected under 35 U.S.C. 102(b) as being anticipated by *Kampf et al (US PAT NO. 5,341,675)* hereinafter referred to as Kampf. Applicant respectfully disagrees with the rejection.

The Office Action states, in part:

Regarding claim 1 Kampf discloses providing a **cam sensor wheel** (See Figure 6 (37)) having a plurality of teeth including **an index (See Figure 6 (37)) tooth** formed upon the circumference of the cam sensor wheel; providing a sequence of pulses (See Abstract, Column 5 Lines 52-68, Column 6 Lines 1-5) corresponding to the plurality of teeth; and **using one tooth** among the plurality of teeth for identifying the direction of cam torque (See Title, Abstract, Column 5 Lines 52-68, Column 6 Lines 1-51).

Regarding claim 2 Kampf discloses using the plurality of teeth to determine a **dead time** (See Column 1 Lines 64-68, Column 2 Lines 1-3)

Regarding claim 3 Kampf discloses the step of **pausing** controller updating during dead time (See Column 1 Lines 64-68, Column 2 Lines 1-3), thereby when there is no torque available to drive the **VCT** (See Figure 1 (1), (2)) towards its commanded position, the controller stops accumulating unnecessary values.

Regarding claim 4 Kampf discloses the plurality of teeth is symmetrically (See Figure 6 (37)) distributed upon the circumference of the cam sensor wheel.

Regarding claim 5 Kampf discloses the plurality of teeth is **asymmetrically** (See Figure 8 (6), (7), (8), (9)) distributed upon the circumference of the cam sensor wheel.

Regarding claim 6 Kampf discloses the one tooth is the index tooth (See Figure 6 (37)).

Regarding claim 7 Kampf discloses the VCT system is a **CTA VCT** system (See Figure 6 (37)).

Regarding claim 8 Kampf discloses the VCT system is a **TA VCT** system (See Figure 6 (37)).

Regarding claim 9 Kampf discloses the VCT system is a **OPA VCT** system (See Figure 6 (37)).

Regarding claim 10 Kampf discloses the cam tooth wheel is **asymmetric** (See Figure 6 (20)).

Regarding claim 11 Kampf discloses the cam tooth wheel is symmetric (See Figure 5 (21)).

Kampf teaches an assembly for identifying the direction of power in a driveline in the case of torque transmission. The assembly includes a positively driven first drive element and a second drive element connected to the first to pass on torque. The first and the second drive elements are rotatable relative to each other in a torque-free way, via a limited angle of rotation, but in their respective end positions, relative to each other, *they rest against non-rotating stops*. Furthermore, the assembly includes a switching pin and a sensor for recording the respective relative position of rotation of the second drive element relative to the first drive element. Also, the assembly includes toothed discs and associated sensors for recording the direction of rotation. The sensors load an evaluating unit which, as a function of the relative positions of rotation of the drive elements and the directions of rotation, generates a signal characterizing the direction of power. (Emphasis added)

Kampf seems to address the situation in a four wheel drive vehicle wherein the torque exerted upon different wheel drives are not the same, hence a device is devised therefore. Further, Kampf introduced the device's relationship to a negative torque and the measurement of the same within a range. See the Background section of Kampf (column 1, lines 13-31). Kampf requires **two** disks each having teeth thereon are used for the detection of this negative torque, in that whenever or wherever a negative torque is detected, the system would respond to better address the issue, on the other hand, the instant invention only claimed a **single** wheel NOT two wheels or disks.

Further, Kampf is certainly NOT related to a VCT system having a cam sensor wheel.

Claim 1 recites:

1. In a VCT system, a method for identifying a direction of cam torque, the method comprising the steps of:

providing a **cam sensor wheel** having a plurality of teeth including an **index tooth** formed upon the circumference of the cam sensor wheel;

providing a sequence of pulses corresponding to the plurality of teeth; and

using **one tooth** among the plurality of teeth for identifying the direction of cam torque.

Kampf seems to teach an evenly distributed sensor wheel having NO index tooth as claimed by the instant invention in that “*FIG. 11 shows the toothed discs 20, 21 whose teeth 37 have identical pitch values.*”

The Applicant respectfully point out that the Examiner’s contention that **Figure 6 (37)** is the claimed index tooth is wrong. Applicant contends that numeral (37) may denote any tooth distributed on each “toothed disk 20, 21”. Applicant’s contention is supported by referring to Figs. 11-13 of Kampf, wherein numeral (37) is depicted as more than one signals or pulses which are necessarily derived from more than one tooth. In addition, the numeral (37) is addressed in plural form in Kampf. See column 6, line 14; and column 8, line 17.

Applicant respectfully contends that without the index tooth as claimed, Kampf cannot use **one tooth** among the plurality of teeth for identifying the direction of cam torque. Kampf needs to use at least one tooth on each disc, with a total of at least two teeth. Therefore, Kampf cannot use “**one tooth** among the plurality of teeth for identifying the direction of cam torque” as the present application teaches or suggests.

Therefore, it is respectfully suggested that the rejection of independent claim 1 as being anticipated by Kampf is overcome. Dependent claims 2-11 being dependent upon and further limiting independent claim 1, should also be allowable for that reason, as well as for the additional recitations they contain. Reconsideration and withdrawal of the rejection are respectfully requested.


Conclusion

Applicant believes the claims, as amended, are patentable over the prior art, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully

requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicants' attorney would advance the prosecution of the case to finality, he is invited to telephone the undersigned at the number given below.

"Recognizing that Internet communications are not secured, I hereby authorize the PTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file."

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